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U.S. DEPT. OF
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WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

APR 9 — 1938

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REPORT FOR THE PERIOD APRIL 1 TO 9, 1938.

HAVRE:

Minimum temperatures since April 1 have been 32° or lower every night, light precipitation and considerable cloudiness prevailing. The heavy snowfall occurring the last week of March melted slowly, and no experimental field work has been possible thus far in April. Soil moisture conditions are quite good on all methods of seedbed preparation.

The winter wheat and winter rye projects appear to have survived with very good stands. Crested wheatgrass is making its customary early growth, and several native species are beginning to revive.

The general farm department is engaged in plowing and levelling cut-over land in preparation for a grain hay crop, fairly good progress having been made to date. Cold, disagreeable weather has been unfavorable for calving, which is now in progress.

Maximum temperature, 61°; minimum, 5°; precipitation, .01 inch.

JUDITH BASIN:

On the evening of the 5th there was a light fall of snow with little drifting. Wind movement was moderate during the period. Temperatures have been rather low, delaying field work and the burning of weeds. For this time of the year conditions as a whole continue to be better than for a number of years.

Station work has consisted of some spring plowing, use of the oneway, raking and burning thistles, poisoning gophers, shelterbelt work, and grinding feed.

Mr. Samuel Litzenberger, Cereal Crops & Diseases, stationed at Bozeman, made an official visit on the 8th and 9th.

Maximum temperature, 63°; minimum, 12°; precipitation, .04 inch.

SHERIDAN:

Field work was general the first of the current week, until stopped by snow at noon on the 5th. Land was prepared for seeding; the first date of seeding spring grain, extra tillage of spring wheat, field peas for seed, a seed block of spring wheat, and some barley for feed or seed were sown, and tillage in the rotation field was started. Only miscellaneous work was possible during the remainder of the week.

The snow has now disappeared completely, and it appears that field work will be possible again the first of next week. No crickets have been noted on the station, but small ones have been reported in great numbers in the hills nearby, which means that they will be on the station as soon as warm weather is here, unless stopped by some natural condition, which does not appear probable now.

Maximum temperature, 55°; minimum, 5°; precipitation, .50 inch.
5½ inches snow on ground morning of 6th, some melted.

DICKINSON:

Cold weather with hard freezes each night delayed tillage operations. Minimum temperatures were below 20° each night and were below 10° on three nights. Ice interfered with the evaporation measurements until the afternoon of the 8th.

Precipitation amounted to only 0.04 inch. During the past 30 days it has amounted to only 0.17 inch. The surface of plots that were plowed or disced two weeks ago is becoming dry.

Vegetation made little growth during the past two weeks but does not show any significant effect of the low temperatures. Tillage was resumed on the rotation plots on the afternoon of the 8th. If fair weather continues seeding of plots probably will begin about the 12th.

Crested wheatgrass, bromegrass, and western wheatgrass were seeded today with both common and furrow drills for comparison of stands with the plots seeded late in the fall.

Farmers of the district feel more confidence in seeding than during the past few years. There has been an active interest in power, tillage, and seeding machinery. One dealer reports more early spring sales than in any year since 1929. This is mainly repairs and parts, with very few new machines going out.

Maximum temperature, 55°; minimum, 6°; precipitation, .04 inch.

MANDAN:

Agronomy - Field work continued intermittently throughout the week. Ground was frozen mornings so it was not fit for working until afternoon. The first full day it could be worked was on the 8th. The plots are now practically prepared for seeding.

Crested wheatgrass started growth during the latter part of March, but its progress has been slow.

Maximum temperature, 51°; minimum, 14°; precipitation, Trace.

Horticulture - Melted snow has left the soil in good condition for tree planting, which is now in progress. Orchard trees are now being pruned as time permits.

It appears that winter injury was not severe. Rabbits were scarce and caused little damage. However, many apple and crab trees are still suffering from results of the 1936 drought and are in poor condition. Plums, native fruits, and small fruits show a better recovery than apples.

Arboriculture - The freezing temperatures most of the week prevented much field work other than the hauling of thistles and brush Thistles have blown in from the surrounding prairie to such an extent that every tree block and hedge is more or less full of them.

Trees were brought into the packing room on Friday afternoon for packing and shipment, which is in progress today. The tree stock appears to have come through the winter in good condition with the exception of hackberry on which there is considerable evidence of root rot. Chinese elm stock was not dug until this spring to prevent loss by root rot during the winter months.

BELLE FOURCHE:

Strong winds continued during the first two days of the month, rounding out a full week of almost continuous high winds. Rapid drying of the surface soil occurred, but crop prospects were greatly improved by a heavy snow of 2 days duration, commencing the night of April 4. Approximately 8.5 inches of snow were received, and 0.81 inch precipitation was recorded. A strong wind accompanied the storm, and considerable drifting of snow took place, but a covering of at least 4 to 5 inches in depth was retained on all areas of level fields. The snow is melting slowly,, and apparently all the moisture will be absorbed by the soil. Comparatively cold weather prevailed throughout the period, and minimum temperatures during the last three days ranged from 2° to 14°.

Fall grain has made no perceptible recovery from soil blowing injury on March 30 and 31, but the recent beneficial precipitation will aid materially in reviving the grain. Sweetclover and alfalfa have resumed growth, and weeds are beginning to appear above ground. Seeding of oats was completed during the half day in which seeding on rotation plots was possible before the storm.

Maximum temperature, 49°; minimum, 2°; precipitation, .81 inch.

ARCHER:

The weather during the period April 1 - 9 was cold and unfavorable for field work except during April 4 and 5, during which plowing of the rotation plots and onewaying the dairy field were underway.

Rain began falling during the evening of April 5. This turned to snow during the night, and on April 6 the storm assumed blizzard-like proportions. Quite large snowdrifts were left among the trees.

The cold weather and snow were unfavorable for station lambing, which was in full swing during the period April 1 - 9. Losses were small, as all lambs were dropped under shed.

Soil moisture is sufficient for some time, and the soil is working better than it has for some years. It is too early to determine to what extent the winter cereals were affected by the rather severe, cold weather. Very likely the winter rye, which was in very good condition, will come through. It is quite possible that the winter wheat is not seriously injured, as the ground was not frozen where covered with snow. Where the soil was not covered with snow the frost penetrated to a depth of 4-5 inches.

Maximum temperature, 53°; minimum, 6°; precipitation, .60 inch.

NORTH PLATTE:

The period from April 1 to 9 was characterized by considerable wind and variable temperatures. A snow storm of blizzard proportions started the night of the 5th and continued through the 6th. It was accompanied by a high north wind, and blocked nearly all east and west roads for from two to three days.

The annual Smith-Hughes high school judging contest was held at the Station on the 7th and 8th. Owing to the storm, the attendance was cut from an expected 363 to about 150.

All spring grains have been seeded on the Station, and those which have been in long enough are showing a good emergence. All available moisture in the soil is confined to the first foot, except after fallow, where there is some available moisture down to 2.5 feet.

Maximum temperature, 58°; minimum, 12°; precipitation, .40 inch.

AKRON:

A snow blizzard on the 5th and 6th, though disagreeable, netted 0.42 inch precipitation. The snow covering was very uneven, the pine tree planting catching a goodly share. Stubble fields filled to the top.

Rotation winter wheat which showed such spotted stands last fall is only now filling up with recently emerged plants. Plowing of the winter wheat stubble land of the old rate and date project was started, but the blizzard interfered to prevent completion by the time this report was written.

Following a very dry fall, 1.48 inches of precipitation was received last September 6. The rotation winter wheat plots were then seeded on September 10, as soon as the ground was dry enough. Despite the fact that there appeared to be ample soil moisture to support germination, emergence was spotted, and did not improve during the fall. By the time this was seeded, plans were made to seed the uniform plots on the new land to the west, but volunteer wheat was noticed to be emerging. Another week was allowed for this volunteer grain to emerge and then the land was rod weeded September 21 and 22, and immediately seeded. This wheat emerged uniformly down all rows, and did not show the skips so obvious even on the fallowed plots in the rotations.

K. S. Quisenberry and Ronald Carpenter of Lincoln inspected the wheat plantings on the 5th. They were joined here by D. W. Robertson and J. J. Curtis of Fort Collins. A. C. Hildreth of the Cheyenne Horticultural Station inspected fruit garden plantings about the 1st.

Shrubbery on the south side of the buildings has responded to the warm weather of March, and buds are swollen almost to the point of breaking into leaf.

Maximum temperature, 59°; minimum, 12°; precipitation, .42 inch.

COLBY:

Wintry weather has prevailed most of this period. Temperatures were below freezing every morning, except the 5th. Monday, the 4th, was a beautiful spring day, but unseasonable low temperatures have prevailed since. A misty rain fell nearly all day and all night Tuesday and up to 3:30 P.M. Wednesday when the rain turned to snow. The snow continued all night and most of the forenoon Thursday. A high wind from the north blew practically all the snow into drifts, causing a mild blizzard throughout the day and most of the night. The snow fall was only about 1.5 inches. The temperature ranged between 17° and 25° the entire day. Friday was mostly clear but windy, with some soil blowing at intervals. By night the snow was gone, except in the larger drifts. Today is another beautiful spring day, and the drifts are disappearing fast.

The winter wheat seems to be pretty well frozen down, but it is probably unhurt. Fruit buds appear to be unhurt, also, except those of the apricots which were out in full bloom. This morning some of the apricot buds are coming into bloom, apparently uninjured. This is rather remarkable considering that the temperatures were in the low twenties while the blizzard was on, and that there was a quarter of an inch of ice on the evaporation tank this morning. The spring small grains are not up yet.

Maximum temperature, 65°; minimum, 15°; precipitation, .16 inch.

HAYS:

After a warm March was concluded, winter returned with a sudden drop in temperature and 4 inches of snow, which fell with a heavy wind during the day and night of the 7th. A drop in temperature to 19° on the night of the 1st was thought to be severe on the most advanced wheat, but it is too early to make satisfactory estimates of damage, if any. The snow drifted badly, little of it remaining on the fields. Warm soil underneath the snow, and a warm sun yesterday melted most of the snow off the fields, even though highways are blocked making travel dangerous even where travel is possible. Early this morning, messages by wire can go only 10 miles east, 12 miles west, and about 30 miles north and south on account of pole and wire trouble due to the storm.

Since the March report little change has taken place in crop condition as the winter weather stopped development. However, spring small grains reported emerging are all up to a good stand. This morning it appears these crops have suffered perhaps less than the most forward winter wheat, the top growth of which is wilted and looks rather sick.

Before the stormy weather arrived, the trimming of winter wheat and rye plots was completed, and soil moisture samples were taken to determine spring condition of plots of winter wheat, barley, and oats.

A casual glance over the results seem to indicate that in general, the precipitation since seeding has replaced the amount lost from the surface soil by evaporation and that used by the wheat, but has added little if any to the subsoil, except possibly a very slight amount to the second foot.

Maximum temperature, 66°; minimum, 19°; precipitation, .44 inch.

Precipitation:	April 5, -	.04-inch
	April 6, -	T
	April 7, -	.35-inch
	April 8, -	.05-inch
		.44-inch

GARDEN CITY:

A blizzard occurred on the 7th, but only 0.11 inch of water was received. Most of the snow blew off the fields which did not have any obstruction, and piled in the roads and fences. The wind velocity on the 6th and 7th was 25.6 and 28.9 M.P.H. respectively, which is higher than any day last year and thus far this year.

The wheat on the station is in a little better condition since the 0.60 inch rain in March. but the chances for a crop are small.

C. O. Grandfield from Manhattan, Kansas, was a visitor of the station.

Maximum temperature, 70°; minimum, 19°; precipitation, .12 inch.

TUCUMCARI:

An extremely severe blizzard over much of the southern Great Plains, lasting some 55 or 60 hours, caused severe blowing in the vicinity of Tucumcari. This immediate vicinity received no moisture, roads were not blocked, and no injury nor death was reported. Several deaths occurred in the Texas panhandle, where there was heavy snow, and both highways and railroad tracks were impassable.

Wind velocity averaged 21.1 miles on the station 2-foot anemometer from 10 A.M. Wednesday until 5 P.M. Friday, a period of 55 hours. Station fields blew the worst in years. Thin and late wheat on the plains to the south received heavy damage, many fields blowing out. Early wheat, where the land was well covered, was less severely hurt.

Temperature fell to 20°, the lowest since February 23, early April 7, and the maximum that date was 36°. Albuquerque and Amarillo papers report the most extreme cold period at this time of year and the highest prolonged wind velocity in several decades.

Early in the month trees were planted--Monday, weather permitting, these will either be uncovered or replanted, so far as is necessary.

Maximum temperature, 81°; minimum, 20°; precipitation, .30 inch.

DALHART:

This past week gave this territory one of the worst storms ever experienced. Beginning Wednesday morning (the 6th) at 9 o'clock a sweeping wind from the north continued without one pause until noon on Friday and then gradually subsided by nightfall. The average wind velocity, at the 2-foot height for the 24 hours Wednesday and Wednesday night was 35.7 M.P.H., and the average for the next 24 hour period was 37.0 M.P.H. This high wind was accompanied by snow to the northeast of the station, and by smothering quantities of sand in this immediate area. Every obstruction on the station that would deflect the wind now outlines a soil drift. Sand drifts upwards of 4 feet in height and 150 feet long still remain on the station as gruesome evidence of this regions worst sandstorm.

Work during the period has been chiefly rewatering tree transplants and the preparation of sorghum nursery seed for planting. After the storm the work consisted of strip cultivation of fields and working of sand-drifts. The station fields appear to show only slight damage from the sand-blizzard. The vast accumulations around the buildings apparently came from the field north of the station. This field was in native sod until February, 1930 when it was broken for farming. Only two partial crops were ever produced after breaking. During the past three crop seasons it has remained idle. Earlier winds this spring had stripped the ground on this field of weed cover.

The temperatures during the severe blow period were below freezing, and, for the greater part of the 51-hour period, were below 20°. The evaporation tank was drifted full of sand and then a dune of sand like an immense snow-drift on top of that. Evaporation records will be disturbed for a few days until the mass of frozen mud in the tank can be safely removed.

Maximum temperature was 78°; minimum, 15°; precipitation, 0.03 inch from a snow on the 2nd (a continuation of the snow reported in the previous report.) Only a trace of snow was received on the 8th.

BIG SPRING:

Temperatures took a nose dive during the week, when the mild, spring weather, which had prevailed during the past six weeks, was replaced with a stiff norther. This cold, north wind hit here on the afternoon of April 8 and continued for 48 hours without a break. During the first night the strong wind was accompanied by snow, the amount of which was hard to determine as it piled up so. Minimum temperature dropped to 25° the first night, which was the first time below freezing temperatures have been recorded since February 25.

A most promising fruit crop was entirely destroyed, as all peaches and plums had attained considerable size; it is probable that grapes will be the only fruit to bear this year. All new growth on trees and shrubs was killed, so that many of the flowering shrubs that were in bloom present a rather sickly appearance. All tree leaves are crisp and are rapidly falling. Wheat that had attained some size was damaged somewhat, but that which had been kept grazed down to a late date probably survived with little damage. Livestock loses were confined to the sheep country where several thousand head of lambs are reported to have died from exposure.

Work during the week consised mainly of threshing milo for the feeding work, watering shrubs, and cleaning seed.

Maximum temperature, 92°; minimum, 25°; precipitation, .05 inch.

LAWTON: (Report for month of March)

The lack of winter injury, a good supply of subsoil moisture, and temperatures that were above the monthly average were responsible for the rapid growth of wheat, winter oats, and winter barley during the month of March. At the end of the month, wheat in the north central part of the State was more fully advanced than in the southwestern part except on the more fertile bottom fields. Growers were apprehensive of injury from a late spring freeze, and they were forecasting a very early harvest if no injury developed.

Early Blackhull wheat was well botted by the end of the month, and one variety of winter oats, Coker 33-19, was heading. A volunteer field of oats on the station that had not been grazed during the winter was also heading. Spring seeded oats was making fully normal growth, and fall seeded alfalfa was doing unusually well. The second year growth of sweetclover was rank and vigorous, standing knee high or better.

Corn seeded on the rotation plots March 14 emerged to good stands by the 28th except on three plots. Sweetclover in rotations 133 and 134 and alfalfa in rotation 142 were seeded March 15.

The March precipitation of 4.42 inches, all but 0.11 inch falling on the 25th to 27th, brought the subtotal for the year to 10.58 inches, nearly 3 times the normal for the period January to March.

LAWTON:

A subfreezing temperature of 28° and a very heavy frost on April 1 produced only negligible injury to fruit and field crops, except corn which was killed back to the surface. But little leaf tip injury was apparent on alfalfa and spring seeded oats.

The few days of subsequent warm weather with temperatures as high as 77° on the 6th terminated rapidly when the wind changed to the north at noon on the 6th and increased to gale like velocity by night. By the morning of the 7th a blizzard of sleet and snow driven in swirling masses gripped the country, paralyzing highway and rail traffic for 48 hours. The snow melted partly as it fell, but drifted badly under pressure of a wind velocity that averaged 23 miles per hour for a 24-hour period. Temperatures of 27° to30° obtained over a period of at least 30 hours. The severity of this storm has not been equaled in April during the 23 years of records at this station. Local residents report similar conditions on April 12, 1904, and March 31, 1909.

Under the present date, the extent of freeze injury to wheat, winter oats, and winter barley cannot be very well determined. Wheat that has not been heavily grazed was very growthy, much of it approaching the booting stage. The injury to foliage appears to be heavy. The basal portion of the plants was protected with heavy masses of snow. Early Blackhull was well booted, and freeze injury already appears very severe.

Winter barley is about ready to head, and early maturing selections of winter oats and fields of volunteer oats were 30 to 75 percent headed.

Alfalfa and sweetclover are probably frozen back to the ground. Most of the deciduous trees were in full leaf, and practically all of the foliage is killed. A good many limbs were also broken off by the high wind that obtained for nearly 2½ days.

Although only 0.20 inch of precipitation was recorded in the rain gauge, and part that was made up of rain and sleet, it is generally estimated that there was at least 4 inches of wet snow.

WOODWARD:

The outstanding event of the week was a blizzard which started Thursday morning and continued through Friday with snow fall of about 1 foot and an average wind velocity for Thursday of 24 M.P.H. Temperature dropped to 22° on two nights, but as much of the wheat had a snow cover it is doubtful that much damage was done. The long, soft, green leaves were whipped by the wind, and no doubt those most exposed were frozen. These will die and give a dead appearance to fields. But from examinations made to date it does not seem that the heads, enclosed in their sheaths of leaves, were injured.

The driving, snow laden wind, and freezing, killed most of the young leaves on trees and shrubbery.

Work for past week has been shipping and planting nursery stock and making grass seedings.

HUNTLEY:

Light showers and wet snows, during the period, combined with cloudy skies, kept the soil too wet for field work on the station so f r this month. However, on some of the lighter soils of the region, tillage and seeding operations have been in progress the last three days. The favorable soil moisture conditions in March and the first 9 days of April have stimulated considerable interest in planting spring wheat on dryland, and it now appears that the acreage of this crop will be comparatively large.

Winter wheat and rye have made a marked growth in the last week, and station plots as well as neighboring commercial fields now look very green. Weeds are also starting well on untilled stubble and roadside lands as well as on the range, Native grasses show advancement and in some locations would supply limited grazing. A survey of the crested wheat grass plantings on the station shows an unusually large number of volunteer seedlings coming up between the old crowns. Fall-sown crested wheatgrass is also coming up but it is yet too early to determine the stand.

Maximum temperature, 69°; minimum, 19°; precipitation, .34 inch.

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APR 16 1938

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REPORT FOR THE WEEK ENDING APRIL 16, 1938.

HAVRE:

Favorable weather for field work prevailed during the entire week, and farming operations of all kinds were in evidence throughout the district. The mean temperature was 8° above normal. Winter wheat, winter rye, perennial forages, and weeds made good growth for this time of the year. Wind movement was relatively light.

Experimental field activities witnessed the completion of spring plowing in the D.L.A. and other projects. Fallow has also been cultivated with a spring-tooth harrow. An early seeding of wheat, oats, barley, rye, and millet was made April 11.

The General Farm department seeded 22 acres of spring rye for hay. Plowing and leveling cut over bottom land continued. Two additional tracts, reclaimed in 1937, were sown to alfalfa and oats. Weeds were raked and burned from increase fields of crested wheatgrass and alfalfa, and cleaning up of weedy stubble is now in progress. Livestock in general are in good condition, but feeding will be necessary for some time on account of grass shortage.

Maximum temperature, 69°; minimum, 31°; precipitation, .01 inch.

HUNTLEY:

Soil and climatic conditions have been favorable for field work throughout the week, and much has been accomplished in the way of tillage and seeding operations. Seedbed preparation for small grains was completed, and most of the planting was done in the rotation and pasture experiments. Land that had been prepared for seeding during the few days when field work was possible in March had to be re-cultivated to destroy weeds which came up during the stormy weather.

Winter wheat and rye continue to make a good growth, the plants having stooled out to the extent that they now cover the space between drill rows. A few cutworms are appearing in some of the plots but to date have done little damage.

Mormon crickets are hatching in large numbers over the benchland country south of the station, and ranchers are preparing to start control measures at an early date. This pest came within 2 miles of the station last summer but retreated to the hill country again at the end of the season.

Maximum temperature, 69°; minimum 25°; precipitation, .04 inch.

JUDITH BASIN:

The week was warm with 3 days having temperatures above 60°. Winter grains, grass and pastures have advanced rapidly.

Precipitation received on 6 days of the week totaled .55 inch. This makes a total of .59 for the month, a little more than half normal. Ample top-soil moisture should make spring grains emerge with good stands. Wind velocity was moderate for this time of the year.

Station work consisted of completing the tillage of two field blocks, duckfooting the garden, raking and burning thistles, repairing machinery, potting and planting shelterbelt stock, and painting and papering Mess house.

Sixteen yearling steers purchased at Bozeman for the season's pasture trial arrived on the 15th. Although the animals are of only fair flesh they are much more uniform than the group used last year.

Director McKee was an official visitor on the 13th and 14th.

Maximum temperature, 65°; minimum, 32°; precipitation, .55 inch.

SHERIDAN:

Temperatures over the week were somewhat above the seasonal average, and there was no precipitation of consequence. Wind movement was low. Field work was delayed on one day because of light rain which moistened the surface just enough to ball up on machinery.

All early seedings requiring no spring plowing, including the rotations, varieties of spring grain, alfalfa, and sweetclover, were completed. Spring plowing in the rotations probably can be done the first of next week if no rain occurs, although stubble land still appears rather gummy. Nursery stock was received from the Mandan station in time to plant shelterbelt replacements while field work was delayed. Fall seedings of crested wheatgrass and the sweetclover broadcast late in February are now beginning to emerge. Fall grain, the condition of much of which previously appeared rather doubtful, began to show a fair stand on practically all seedings during the week. Crickets were found in great numbers in spots on the station early in the week.

Maximum temperature, 70°; minimum, 30°; precipitation, .08 inch.

MANDAN:

Agronomy - The past week was favorable for all field work. Wheat was seeded on the 14th, the third earliest date of seeding since the station started. Winter rye came through the winter in excellent condition.

No moisture has fallen so far this month until last night. The small amount then registered 0.10 inch will undoubtedly be of benefit as the surface soil has become very dry, and badly baked where it has not been spring cultivated.

Some of the prairie grasses are starting to grow. Peppergrass is likely to be a serious weed on the prairie again this season. It is also very thick in some cultivated fields.

Maximum temperature, 72°; minimum, 32°, precipitation, .10 inch.

Horticulture - A good rain would greatly benefit all horticultural plantings at the present time. If not received soon, considerable drought injury may occur this spring.

Trees above the contour terrace in DaS have been removed, and rows will be planted east and west instead of north and south. This will, we hope, prevent soil erosion. Planting has been in progress most of the week.

Early sowings of vegetables are well under way. No planting of vegetables in the field has been made but will be started as soon as soon as the garden has been put in shape. So far there seems to be ample moisture for germination, but the soil dries out rapidly when tilled.

Lawns about the station ground seem in excellent condition and are greening up rapidly. Buds are swelling on early flowering shrubs, and as there seems to be practically no winterkilling, promise to make an excellent display of bloom this spring. Shrubbery and hedges in the field did not survive so well. There is a great deal of dead wood apparent, expecially in the hedges. This is no doubt due to the weakened condition from the last season's drought. Cutting the plants back to rejuvenate them did not seem to help much except with the Ribes sp. The growth resulting from sprouts from the roots was too weak, and several hedges will have to be grubbed out.

Arboriculture - Shipping of nursery stock to shelterbelt cooperators has been in progress during the week and was completed on Friday. Stock generally was in good condition, and fair stands should become established if weather conditions are favorable. A total of 350 farmers and a number of Federal and State agencies received trees this spring.

Land has been worked down for planting American elm seed carried over from last year. A recent germination test of this seed gave 80 percent, showing for the second successive year that seed of this species can be carried over successfully.

All conifer vacancies in the main windbreak have been replanted and two new blocks set out in the species testing series.

Visitors for the week included Dr. H. C. Hanson, Director, North Dakota Agricultural Experiment Station.

DICKINSON:

Dry weather with moderate temperature and wind movement was favorable for field work throughout the week. Tillage was completed on the rotations, and wheat, oats, barley, and crested wheatgrass were seeded. Winter wheat was reseeded to spring wheat, and winter rye plots were reseeded with Prolific spring rye. The soil contains enough water for development of the crop for a few weeks, but the surface has now become so dry that some of the grain will not germinate until after a rain. Wheat varietal plots and most of the cereal nursery were seeded.

Dr. Herbert C. Hanson, Director, North Dakota Agricultural Experiment Station visited the station April 13.

Maximum temperature, 74°; minimum, 29°; precipitation, trace.

BELLE FOURCHE:

Moderately warm, unsettled weather prevailed throughout the week. The sky was overcast a large portion of the time and general heavy rains occurred to the south and east, but only two light showers were received in the vicinity of Newell. Wind movement and evaporation were low. The surface soil dried slowly, and good stands should be obtained with all crops seeded before April 16.

The warm weather was favorable to a rapid growth of crested wheatgrass, and lawns became quite green. Fall grain showed marked improvement but considerable winter wheat apparently was destroyed by soil blowing late in March. Oats seeded April 4 are well germinated. Seeding small grain, peas, flax, alfalfa and sweetclover on rotation plots was completed.

Maximum temperature, 72°; minimum, 31°; precipitation, .17 inch.

ARCHER:

During April 12 to 14 the weather was favorable for field work, but during April 11, 15, and 16 the soil was too wet to work. A rain of 1.13 inches occurred during the night of April 14. Intermittent clouds of mist swept the landscape April 15. To-day, April 16, a brisk northwest wind prevails and the sky is clearing. To date the total precipitation for April is 1.78 inches.

Most of the winter wheat survived the cold weather of the previous week and is making good growth. Winter rye on fallow is in excellent condition. Crested wheatgrass has made rapid growth. It is planned to put the ewes with lambs on crested wheatgrass pasture in a few days. Spring wheat seeded March 21 has sprouted but has not yet emerged.

Plowing and duckfooting of the rotation plots progressed during the week, and about two more days will be required to finish this work.

Ranchers and farmers are much encouraged by the moisture. Field operations are in full swing, and early pastures are furnishing some grazing.

L. B. McWethy, Co. F.S.A. Supervisor, visited the station April 12 to discuss garden tillage and garden crops.

Maximum temperature, 67°; minimum, 29°; precipitation, 1.18 inches.

COLBY:

This has been a typical April week of changeable weather. The first four days were rather warm and pleasant. Wednesday and Thursday continued warm but were very windy and dusty with some soil blowing. Thursday evening a general rain covered this section of the State, but here it was only a shower. Since then it has been mostly cloudy, and another light shower fell early this morning. Today is cloudy with a chilly northwest wind blowing.

The spring small grains came up the fore part of the week after being in the ground over three weeks. Good stands were secured on all plots. The peas are just coming through. Nearly all the winter wheat plots are showing good stands. Those next to stubble plots show ragged along the edges where the grasshoppers worked. The wheat has made excellent growth since the freezes of last week. The rye plots are thin and spotted.

Maximum temperature, 82°; minimum, 26°; precipitation, .26 inch.

HAYS:

The showers of the past week together with favorable temperatures and more rain this week keep the wheat in thrifty growing condition, in fact there is fear of too much growth which is using most of the moisture as it falls, so there is still very little reserve to carry the crop through short droughts which usually occur some time previous to harvest.

The low temperature reported last week does not seem to have caused permanent injury to the wheat, oats or barley other than a little top growth killing. The spring rains have provided sufficient moisture so that the stand of the spring grains is about the same on all plots regardless of the seedbed preparation. Bromegrass is coming nicely and is up to almost a good stand. The showers have been ideal for it. Canada field peas are also looking fine.

To give some idea of the stage of development of the winter wheat it may be stated that on late preparation, (late plowing or disking) there is about 70 or 75 percent stand, 1 to 4 inches high and covers about 25 percent of the ground surface. On early preparation, about 90 percent stand, 2 to 5 inches high and covers about 50 percent of the ground. On fallow, 90 percent stand, 2 to 8 inches high, (average 6 or 7 inches) and covers about 80 to 85 percent of the ground surface. On corn stubble plots the growth is much the same as on early prepared wheat stubble plots except that the stand is slightly streaked. On kafir stubble plots the growth is more like that on late prepared ground. The growth is lighter than on the corn stubble plots.

Plots to be spring plowed for corn, kafir, and milo were plowed during the week. Roads and alleys were cultivated and soil samples were collected from a number of plots.

Maximum temperature, 76°; minimum, 25°; precipitation, total of two showers, Thursday night and Friday, .82 inch.

TUCUMCARI:

Periods of high wind movement have resulted in continued blowing of fields. Since the high 55-hour north wind of a week ago there have been three days with strong SW wind. March was the third windiest on record, and to date April has held the same rank for April.

Temperatures in the low 20's the past 10 days appear to have killed practically all fruit except apples and grapes, with a few blossoms on cherry trees escaping damage.

During the week a large amount of listing and field cultivating has been performed. The balance of the time has been devoted to a discouraging attempt to save recently planted trees and shrubs by watering and endeavoring to protect them from soil movement. Conifer transplants will perhaps show 100 percent mortality, the direct result of desiccating winds.

Wheat on the plains south of Tucumcari is variable -- much is in need of calm weather, much is destroyed, and many fields have withstood the intensely high winds without apparent serious injury.

Maximum temperature, 82°; minimum, 35°; precipitation, trace.
Evaporation, 1.81 inches. Average wind velocity, 10.8 miles.
Highest 24-hour average, 21.3 m.p.h.

DALHART:

Rather unfavorable weather was nearly continuous for the week. Soil movement occurred on five days, on Thursday the drifting was especially intense.

Work during the week has been largely soil drift working and removal of drifts from the station farmstead roadways. It was also necessary to uncover some 2 to 3 foot conifers which received the brunt of the soil drifting from the north in the preceding week.

Maximum temperature, 81°; minimum, 20°; precipitation, .02 inch

BIG SPRING:

Weather remained warm during the week, which was quite a contrast to the blizzard of the week previous. A hard, dashing rain of only .16 inch was received on the afternoon of April 14; this slicked over the fields so they were in good shape to blow the next day when the wind velocity stepped up. It will now be necessary to do considerable cultivation to prevent further soil movement.

The Station grounds present a rather sickly appearance with all the new growth of spring turned black and the trees shedding their leaves as a result of the recent freeze.

Station work during the week consisted of relisting an increase field, watering young evergreens, and hoeing weeds from rows. The April 15 date of seeding of cotton was made.

Maximum temperature, 87°; minimum, 42°; precipitation, .16 inch.

LAWTON:

The April 6 to 8 blizzard and freeze that caused so much fear and apprehension among wheat growers and men engaged in the grain trade produced little permanent injury in southwestern Oklahoma, if present conditions and crop appearances afford a correct basis for judgement. Injury was confined principally to frozen leaf tips that now give the crop an unattractive appearance. A wonderful recovery was made during the week. Temporary lodging in fields of rank growth, caused by wind and snow has been largely overcome. Careful observation of 31 varities grown on the station showed little difference in the extent of leaf injury, except Early Blackhull, where such injury was extensive. The first heads in this variety were showing April 15. A trip of 100 miles on the 15th, southwest and southeast of Lawton covered wheat growing territory that includes a dominant acreage of Blackhull. Several fields on fertile bottom land and on good, average upland soils were fully headed. Careful observation revealed only frozen foliage and an appreciable percentage of culms broken at one of the nodes. In some instances it is quite possible that defoliation may be too extensive to permit normal maturity. Development of this possibility remains to be determined. No injury to heads was apparent. On all of the fields observed, prospects for a heavy yeild were still favorable.

If wheat makes normal development from now on to maturity there will be only a negligible reduction in yield due to cold injury in this part of the state.

One field of Early Missouri Beardless Barley, in full head, showed considerable injury to heads and many culms broken at one of the intermediate nodes.

The weekly temperatures ranged from a minimum of 38° to a maximum of 76° and 0.22 inch precipitation was recorded on the 14th.

Rotation plots of alfalfa, corn and sweetclover were replanted April 11. A grass nursery including 68 selections was also planted on the 11th.

GARDEN CITY:

This week has been rather mild, and a little moisture was received. Three rains fell which totaled .34 inch. Dust occurred on four of the days, but most of it came in from other areas. Immediately following a .27 inch rain, dust came in from the south.

Field work consisted of spring plowing and listing. The spring wheat, barley, oats and flax plots were packed and then seeded. The plots on the new basin lister project which were to be in wheat this year, were cultivated with two-inch shovels and drilled to barley.

Mr. A. L. Clapp from Manhattan, Kansas, in charge of Cooperative Experiments, and Dr. H. H. Laude, Professor of Farm Crops, Kansas State College, were visitors of the station.

Maximum temperature, 80°; minimum, 31°, precipitation, .34 inch.

NOTE

Mr. J. O. Belz recently retired from service on account of age. Shipment of soil tubes for repairs should be sent to Section of Genetics and Biophysics, Division of Cereal Crops and Diseases, Bureau of Plant Industry, Department of Agriculture, Washington, D. C. Mr. William D. Donahoo will continue to do work in shop there as previously.

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WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

APR 23 1938

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REPORT FOR THE WEEK ENDING APRIL 23, 1938.

HAVRE:

Partly cloudy skies, slightly lower temperatures, strong westerly winds on three days, and no precipitation of consequence typified the weather of the past week.

Seedbed preparation in the experimental field was uninterrupted, and practically all projects are now ready for the routine planting of spring wheat, oats, barley, and rye. Early sown grains have emerged with uniform stands. A first date of seeding safflowers and flax was also made.

The farm department completed irrigating 70 acres of benchland alfalfa, and a 14-acre strip of spring rye for grain hay was planted in field C. Bottom land reclamation work by WPA continued with additional acreage now about prepared for cropping. The channel of Beaver Creek was also straightened through one of these tracts by the above mentioned agency.

Winter feeding trials of calves and yearlings have been terminated. Number branding, dehorning, and calving constituted the principal livestock activities.

Maximum temperature, 68°; minimum, 23°; precipitation, trace.

HUNTLEY:

Two showers occurred during the week, but the amount of moisture received was not sufficient to delay field work more than two hours. As a result of the generally favorable weather, farmers have practically completed the seeding of spring grain and forage crops. Wheat sown before the last storm is emerging with what appears to be perfect stands. Winter grains continue to advance, with stands and condition excellent on most fields.

Tillage and seeding of early crops was completed on the plots, and a start was made in the preparation of corn ground. Crested wheatgrass seedings were made on "abandoned land", cultivated and uncultivated stubble land, and on fallow, in the methods of seeding experiments. Alfalfa was sown in the pasture and variety experiments.

Native pastures have improved greatly during the last few days, and cattle are being moved to the foothill ranges from valley farms.

Maximum temperature, 77°; minimum 19°; precipitation, 0.14 inch.

SHERIDAN:

The first of the week was quite warm, but following a light rain on the evening of the 18th the remainder of the week was partly cloudy and cooler, with two light showers just sufficient to delay field work temporarily. Spring plowing of the rotations for small grain was completed the first of the week, and sowing on the 22nd. Russian thistles which had been blown into the shelterbelt from a field a mile or more west of the station by the high winds in March, almost completely filling it, were cleared out and burned. Wayne Austin of the Soil Conservation Service was at the station Thursday and Friday making grass seedings.

Grain sown early in April emerged during the week with good stands. Volunteer spring grain emerged thick on nearly all fall plowing, and Russian thistles also have started thick. Grass and fall seedings of grain made a good growth.

Sheep were moved to temporary pasture until the regular pastures are ready. Lambing was previously completed, with 53 lambs from 32 ewes, 5 young ewes and 4 older ones not lambing.

The March seeding of alfalfa emerged with a good stand. The grasses sown at the same time and the February seeding of sweetclover have just begun to emerge.

Maximum temperature, 81°; minimum, 29°; precipitation, 0.75 inch.

DICKINSON:

Strong winds the first three days of the week dried out the surface soil and caused some soil blowing. A light shower on the night of the 18th held the dust down for only about an hour the following morning. Little effect of freezing was noted when the temperature dropped to 21° on the night of the 20th.

Wheat planted on the rotations April 12 is beginning to emerge. A full stand cannot be expected until after a good rain.

Blocks of Badlands cedar, ponderosa pine, Colorado blue spruce, green ash, hackberry, and American elm were planted from stock supplied by the Northern Great Plains Field Station. A number of evergreens were transplanted to the shelterbelt to fill in where all of the old trees were removed last winter.

Maximum temperature, 78°; minimum, 21°; precipitation, 0.12 inch.

MANDAN:

Agronomy - The past week continued dry with several days of high wind that caused some soil blowing. There has been no moisture of value so far this month. The surface is so dry that seedlings have little chance of getting started.

Wheat planted on the 12th is starting to come up in spots. Oats and barley were seeded in the rotations during the week, but there is little chance for growth before a good rain.

At the present time it appears that most late fall seeding of grass will be entire failures.

Maximum temperature, 72°; minimum, 23°; precipitation, none.

Horticulture - Planting fruit trees in breeding blocks and orchards is now almost completed. In part of DaS trees have been pulled out and a new planting made which permits cultivation across the slope rather than up and down the slope as in the old planting. It is thought that this will be of great help in retaining water from rains.

Apricots are starting to bloom, and some of the plums will probably start next week. Most Prunus species will show a heavy bloom. It still appears that winter injury to most fruit trees was not severe, but there may be a considerable amount of spring drought injury unless rains come soon.

The early planting of vegetables was completed Monday and Tuesday. It included onions, parsnip, carrots, and peas in the acre garden and spinach, radishes, turnips, beets, carrots, onions, parsnips, peas, kohl rabi, and parsnip rooted parsley in the coulee garden. The top-soil is dry, and germination may be delayed until rain comes. There seems to be ample moisture below the surface for good growth after germination.

Tulips, lilies, and other perennials are starting new growth and seem to have survived the winter in good condition.

Lawns are greening up very slowly, but seem to be in excellent condition. Shrubbery is greening up rapidly, and at present the Prunus armeniaca is in full bloom. Some individual trees of a more pronounced pink color are very beautiful indeed and highly desirable for larger groups and mixed plantings. Prunus triloba, a near relative and much showier, as usual appears to have the flower buds killed.

Arboriculture - All nursery fields and part of the testing blocks have been cultivated. American elm seed has been planted, and a number of trees have been set out in various permanent plantings. Juniper seed planted in the fall of 1936 is now emerging to excellent stands. Considerable difficulty is being experienced with soil crusting on the juniper beds, and it has become necessary to break the crust on a number of them. Rain is badly needed to bring through germinated seed of several hardwood species planted this spring. Unless it is received in the near future there is likely to be heavy losses as the germinated seed is now in dry soil.

Visitors at the station included Prof. E. J. Thompson, Chief, Animal Husbandry, North Dakota Agricultural College; Earle A. Cole, Agricultural Engineer, S. C. S.; and R. L. Shotwell, Bureau of Entomology, Bozeman, Montana.

ARCHER:

The weather during the past week was favorable for field work, except during April 19 and 23 when precipitation prevented field operations. All early spring tillage has been completed, and rotation plots are being staked in preparation for seeding.

Wheat seeded March 21 emerged April 20. Notwithstanding this slowness of crop growth, the grasses have made a fairly good showing. The ewes with lambs were put on crested wheatgrass pasture April 16. Grama grass is sending out green shoots.

Farmers are making their usual spring visits to the station and express more optimism than they have for some years.

Maximum temperature, 71°; minimum, 29°; precipitation, 0.34 inch.

AKRON: (For week ending April 16) (Inadvertently omitted last week)

Drizzling showers over the week brings the total for the first half of April to 1.05 inches, practically half the average precipitation for that month.

Active field work was continued. The stubble land of the rate and spacing project was moldboard plowed in preparation for the crops this spring. The series devoted to the crops last year was not fall seeded to winter wheat because of the low soil moisture content of the soil, but was seeded to Brunker oats this past week with excellent prospects for promptly emerged stands. A start was made preparing the land devoted to the forage and grain sorghum veriety experiment. The duckfoot cultivator has heretofore been used for this work, but the John Deere-Peacock damming lister is being used this spring. This machine appears to do the same type of work as the duckfoot, but in addition dams the furrows created. It leaves a nicely waffled surface for holding rainfall that cannot immediately penetrate the soil.

A new WPA Project, approved last fall, was started the fore part of the week.

Maximum temperature, 73°; minimum, 31°; precipitation, 0.63 inch.

AKRON:

Sky was overcast with clouds practically all the week. Early spring seeded small grains on the rotations are now emerging. Winter wheat does not now seem to have filled the blank spaces in the rows as well as earlier prospects promised. Much of this emerging wheat leafed out and succumbed before it reached the surface.

First date and seed treatment of corn was planted on the 20th. Other work was the Peacocking of the forage variety series to be seeded to Sudan grass, to be fallowed, and to be seeded later this spring to sorghum varieties. The last year's fallow to be seeded this spring was so treated last fall to thwart soil blowing tendencies. Odd blocks of ground, infested with volunteer winter wheat, were moldboard plowed. Nursery ground to be seeded to corn this spring, and so infested, was duckfoot cultivated. A. W. Krofchek arrived Thursday from the Cheyenne Horticultural Field Station with 38 fruit trees, and fill-in stock for the new forestry plantings. This stock was all planted Friday and Saturday morning.

Plums in the fruit garden are in bloom this week end. Some of the foundation shrubbery is practically in leaf.

Maximum temperature, 80°; minimum, 29°; precipitation, 0.08 inch.

COLBY:

The weather was rather variable this week. Most of the time it was fairly warm and pleasant but on Tuesday and Friday it was windy and dusty with some soil blowing. Friday was one of the dustiest days of the year to date. The air was filled with dust nearly all day and most of the night. There was no very serious soil blowing locally, however, as most of the ground is now in shape to resist soil blowing for a while. The dust storm ended in the night with a light shower.

The spring small grains are growing nicely. The winter wheat has made excellent growth but is running short of moisture. On nearly all fields, except fallow fields where for some reason there is an exceptional amount of subsoil water, the wheat is beginning to show a lack of moisture. On some fields it is beginning to suffer acutely. The setback may be beneficial if rain does not come too late.

The first tillage work for fallow and the row crops was done the first of the week. The ground was generally moist but unusually loose and mellow. On all the stubble plots thistles up to an inch high were fairly thick.

Maximum temperature, 84°; minimum, 30°; precipitation, 0.01 inch.

GARDEN CITY:

Two rains were received this week, one being 0.09 inch and the other 0.31 inch. The total thus far this month is 0.86 inch. On four days of the seven, there was dust in the air, but it was mild and very little local blowing occurred.

Some of the wheat which is protected from the wind and dust has made fair growth, but that at which the wind and dust have had clear sweep, has developed very little.

Maximum temperature, 83°; minimum, 36°; precipitation, 0.40 inch.

TUCUMCARI:

Warmer weather, lower wind movement, and several cloudy days have marked the past week. Only 0.01 inch precipitation was received, in spite of threatening weather, bringing the month's total to 0.31 inch.

Early listing is completed, and many listed fields in this locality have blown level. Wheat on the plains is in dire need of moisture, injury by cold and high winds two weeks ago was less than first thought, but a present worm damage and drought are daily reducing potential yields.

Apples and cherries have been in bloom the past ten days, escaping the heavy freezes which apparently killed all other tree fruit.

Completion of early listing, repairing fences, hauling water and repair of machinery comprised the week's station work.

Maximum temperature, 83°; minimum, 41°; Wind velocity average 6.2 m.p.h.

DALHART:

There were 3 days of soil blowing, but no severe blowing. On April 20, one of the three days, the soil movement was very light, although there were dust flurries all during the day. April 19, a heavy dust cloud came in from the northeast at 10:30 a.m. It was dark for the first few minutes but proved to be more dust than wind.

The week has been almost entirely spent in the hauling and working of sand drifts around the yards. Small trees and hedges were kept uncovered, and weeds were pulled from fence corners and trees. The weather remaining dry has been helpful in getting the sand to move on. Grass and trees are beginning to show green again after the cold wave of April 6, 7, and 8, that set them back.

Maximum temperature, 81°; minimum, 38°; precipitation, 0.08 inch.

BIG SPRING:

Weather conditions have been very moderate during the past week with wind velocity high on one day. This was accompanied by considerable soil movement where the fields had not been cultivated since the last shower. Station fields had been pretty well roughed up, so little or no soil movement occurred here.

Trees and shrubs are slowly starting to put out new growth again since the freeze. Wheat plots are suffering severely from lack of moisture; in fact some of them appear to be beyond recovery.

Station work has consisted of cultivating plots and increase fields to prevent soil blowing. The harrow was used on the plots and the field cultivator on the increase fields.

Maximum temperature, 88°; minimum, 44°; precipitation, 0.03 inch.

LAWTON:

Good growing weather characterized the past week, with a shower of 0.22 inch on the 21st. Minimum temperatures ranged from 40° to 58° and the maximum temperatures from 63° to 84°.

The grain sorghum variety test was planted on an excellent seed bed April 19. Kafir, feterita, and sorgo were planted on the rotation plots in Field A April 21-22. Good stands of corn, alfalfa, and sweetclover were secured on the second planting made April 4 to 11. The second year growth of sweetclover is just beginning to bloom.

Wheat, winter oats, and winter barley continue to make a rank, vigorous growth. Where manure has been applied to wheat there are indications that lodging may be very extensive. There are also a good many indications that lodging may result from cold injury to some of the lower nodes. Most of the winter barley and winter oats are pretty fully headed. Early Blackhull wheat is fully headed, and the first heads are showing on several other early maturing varieties.

A trip of 170 miles west of southwest of Lawton, made on the 24th showed quite a variation in the development and condition of wheat. In a number of fields west of Lawton and south of Altus, Oklahoma, the foliage was severely injured by the April freeze and subsequent growth has not been normal. In those fields where the crop was beginning to head or fully headed development appeared to be

about normal. However, there is a possibility that excessive lodging may occur due to nodes that were injured by freezing. In some instances the nodes are gradually turning black and others are dead or broken.

Leaf rust infection is at a maximum, and stem rust has been reported as far north as Dallas, Texas.

WOODWARD:

It seems to be characteristic of human nature to fear but not to expect much out of the ordinary. We have had the following rainfall since the first of the year January, 0.03; February, 2.21; March, 1.86; and April up to 23rd, 2.48; or a total of 6.55 inches since the first of the year. Wheat over the country generally is probably looking as well as it has in 20 years, but many people are shaking their heads and saying, "It isn't in the bin yet" and anticipating the climate that has so often come to cut yields.

It is true that the appearances of fields vary greatly. Late seeding is much behind early seeding in stage of maturity. That planted on weedy land is thin and backward compared to that planted on early plowing or fallow. But it all is very promising.

JUDITH BASIN:

The past week has been quite cold with minimums as low as 22°. Precipitation has been low with only 0.01 inch falling. Wind velocity over this week has been typically like Aprils of the past. Monday the most severe dust storm of the year hit the station and area, moving top soil for miles all around. Storms of this seriousness are certainly one of the best arguments that Judith Basin should have more and more grass.

Station work has consisted of completing tillage of the rotations which are in preparation to be seeded. One bulk field of 9 acres was rod weeded and seeded to spring rye for hay. Continued planting of shelterbelt stock, raking and burning weeds, weighing cattle, placing the crested wheatgrass group on pasture, and miscellaneous jobs completed the week.

Mr. Hansmier and Mr. Mercer of the Extension Service at Bozeman, Montana were visitors on the 21st.

Maximum temperature, 68°; minimum, 22°; precipitation, 0.01 inch.

BELLE FOURCHE:

The weather was comparatively cool most of the week, but there were two warm days favorable to plant growth. Precipitation was limited to one light shower, and strong winds caused rapid drying of the surface soil. A heavy frost on April 20, injured some garden vegetables but did no damage to field crops.

Fall grain and crested wheatgrass made an exceptionally good growth, but spring grains are coming up very slowly. Oats seeded April 4 have not fully emerged, but perfect stands apparently will be obtained on all plots. Spring wheat, barley, flax, sweetclover, and alfalfa are beginning to come up.

Maximum temperature, 83°; minimum, 21°; precipitation, 0.04 inch.

HAYS:

The weather has been generally mild, quiet (except for a day or two) and partly cloudy with threatening rain clouds at times but little rain.

Winter wheat, spring grains, grasses, and weeds have been making good growth all week, but now, at the close of the week, the wheat, by its appearance shows clearly that it has consumed most of the easily available soil moisture. A little pinching by dry weather at this time, if it can be followed by some good rains a little later, (not too late) will be in the wheat's favor. It would have been better (we think) for the wheat to have had the "pinching" earlier. However, it will be better now than later. By its appearance the wheat is beginning to show some advantage for basin listing over cultivation. Also there appears to be a slight advantage on some chiseled plots. These methods had some advantage, the tillage work having been done just previous to a torrential rain. Soil moisture determinations did not indicate a large amount of difference, but just that much difference, or just a little more stored moisture at this, the breaking point, when the wheat begins to want for water, shows up for the first time, and is quite noticeable. The growth of wheat on fallow is very much heavier than on any of the cropped plots. The extra growth is rapidly consuming the comparatively small amount of moisture that was stored by fallow last season. With all the extra growth to be supported it now appears possible that some of the plots having less water at the beginning, which were at a disadvantage in the beginning and promised little, may finish the job better than some plots that contained a little more moisture, but which also started with a heavier growth and higher potential yields. It all depends upon the distribution of precipitation between this date and harvest.

An excellent stand of bromegrass was secured as a result of seeding last month.

During the week a number of soil samples were collected for moisture determinations. Alleys and roads were cleaned up and ditches opened. The channel of one large drainage ditch (east-west ditch south of field B) was moved about two rods south to further reduce the danger of flooding the plots when a period of wet years return.

The cropped plots on the project have been staked for labels showing order of crops in the rotations and average yields that may be of interest to visitors.

The Twenty-fifth Annual Cattlemen's Roundup will be held on the Experiment Station Saturday the 30th, preceeded by Boys and Girls Judging contest Friday.

C. W. Brittain from the Woodward Experiment Station is spending a few days on the Hays Station.

Maximum temperature, 84°; minimum, 32°; precipitation, 0.02 inch.

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U. S. DEPARTMENT OF AGRICULTURE

APR 30 1938

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REPORT FOR THE WEEK ENDING APRIL 30, 1938.

HAVRE:

Cool weather attended by light rain and snow early in the week was succeeded by much warmer conditions at the close. Precipitation in April has totalled only 0.22 inch, and surface moisture is becoming deficient. The mean temperature and wind movement during the month were approximately normal. As a whole conditions from April 10 on have been favorable for field work and the growth of crops.

Seeding of spring wheat, oats, spring rye, and barley was finished in all tillage method projects. Cereal variety tests and nursery plantings likewise have been virtually completed. Various dates of seeding also were made.

Increase fields of Ladak alfalfa and crested wheatgrass received a first cultivation for control of weeds. A thick growth of old Russian thistles was removed and burned on stubble land preliminary to plowing for fallow.

Work is being started by WPA enlarging the hay storage shed and remodeling the livestock corrals.

Maximum temperature, 78°; minimum, 27°; precipitation, 0.20 inch.

MOCCASIN:

After a few showers the first of the week the weather has been ideal for spring planting. As the week progressed temperatures became higher with the wind movement low. To date the total precipitation for April is 1.05 inches which lacks 0.11 of an inch of the 29-year average for the month. The precipitation helped make seedbeds almost perfect for planting and has kept the crested wheatgrass in a continued growth to more than carry the six steers on pasture. Bromegrass and native grass have been a little slow the past week, but with a few more warmer days they will no doubt respond sufficiently to warrant placing the other groups of cattle on their respective pastures.

Work during the week consisted of seeding the rotations, cereal nurseries, cereal varieties, and completing the planting of shelterbelt material. The last seeding of crested wheatgrass was made on the "South Bench". A large part of the west field which was in alfalfa has been sown to crested wheatgrass in 36-inch rows. The grass was sown in the thistles with the furrow drill without any previous preparation. Continued burning of thistles about the buildings and hedges has again improved the appearance of the grounds.

Samuel Litzenberger, agent of the Cereal Crops and Diseases division, from Bozeman was here over the week end to supervise the planting of his material.

Maximum temperature, 75°; minimum, 23°; precipitation, 0.45 inch.

HUNTLEY:

The week has been generally favorable for field work and crop development. Small grains and flax sown in the rotations and pasture experiments have come up, and stands appear to be very good on all plots. Fall grains have been benefited by the last few days, which have been the warmest of the season so far, and have made vigorous growth. Cutworms are working in small areas, but aside from the winter wheat nursery the damage has not been significant. Field work consisted of plowing miscellaneous fallow plots, soil sampling, and some weeding operations. The average depth of moisture in plots cropped to small grains last year is 23 inches, and on plots maintained in fallow, 25 inches.

Maximum temperature, 82°; minimum, 28°; precipitation, 0.19 inch.

SHERIDAN:

Cool, cloudy weather prevailed over the week until the last day. All crops made good progress, and weeds also are starting fast. All grain sown prior to April 17 has emerged with a good stand, as well as alfalfa sown on the 16th.

Spring plowing for corn and later crops in the rotations was completed. All shelterbelts were cultivated, and the 1931 plantings were thinned according to the original plan.

Maximum temperature, 80°; minimum, 27°; precipitation, 0.10 inch.

Total for April to date, 1.40 inches.

DICKINSON:

Cool, cloudy, and foggy weather was followed on Monday morning by a hail storm. This hail fell very rapidly and made the ground white for some time, but no significant damage resulted to plants and the water was of great value. This storm reached only 2 miles south but was much heavier in some places to the west and north. The area south to the State line received less snow during the winter and has continued dry to date. Three cool, cloudy days followed the storm, then temperatures rose much higher at the end of the week.

Vegetation advanced rapidly with the warmer weather. Grain fields have greened up but more time is required for full stands to develop, as some of the grain had remained dry before the rain. Early shrubs and trees are beginning to leaf out. Grasses are as far along on April 30 as they were on June 1, 1937.

Early vegetables, including potatoes and sweet corn, were planted in the garden. Some evergreens and other trees were planted on the grounds. An increase block of Steigum barley was seeded. Alfalfa was planted in the rotations.

A good many reports have been received of army cutworms in the district. These worms were first noted about two weeks ago moving on the surface of the soil. Some of the caterpillars appeared to be nearly full grown. A summer brood of the army cutworm appeared in several localities in 1937 at about the time grains were heading. Some appeared on the station and attacked oats mainly, also wheat, barley, and corn. It is impossible to estimate the amount of damage being done since grains have not completely emerged. It seems probable that damage will be only in small local areas.

Wayne Austin of the Nursery Section, Soil Conservation Service, planted a grass adaptation nursery at the station on April 30.

Other visitors included Dr. A. D. Stoesz, Soil Conservation Service; William Kircher, Field Editor, The Farmer, St. Paul, Minn., Tom Gildersleeve, Extension Editor, NDAC; R. L. Shotwell, Bureau of Entomology and Plant Quarantine; and Ralph Dietrich, County Agent.

Maximum temperature, 78°; minimum, 31°; precipitation, 0.46 inch.

MANDAN:

Agronomy - A good rain fell on the night of the 25th. This was a great help to newly planted crops.

Plowing field blocks for corn and sorgo continued during the week.

Field P is practically prepared for seeding to oats and barley for feed. Wheat is now up to a good stand.

Maximum temperature, 77°; minimum, 35°; precipitation, 0.75 inch.

Cooperative Grazing Experiment - Seventy five yearling steers were delivered at the pasture on the 28th for use in the grazing trials this summer. Grass is getting a fair start. Blue grama grass was starting by the middle of the month, which is early for it.

Horticulture - The rain in the early part of the week was of great benefit to horticultural plantings. Before the rain many branches of trees were dying from drought injury.

Apricots, Prunus tomentosa, and other early blooming fruits are now in bloom. Plums will bloom next week if warm weather continues.

Work during the week included pruning, planting evergreens for shelter, and spraying.

Early vegetables, lawns, and shrubs show much benefit from the recent rain. Peas, radishes, and turnips are up with a good stand. Asparagus and rhubarb are yielding well.

Siberian almond (Amygdalus nana) is in full bloom. Prunus triloba, single and double, and early tulips are commencing to show color. It promises to be a good lilac year, as every species of Syringa on the grounds is loaded with buds.

Arboriculture - Lining out of evergreen seedlings has been completed during the week. Thistles have been hauled and burned from a number of hedges, and some tractor cultivation has been performed. The precipitation the first part of the week was very beneficial for the emergence of tree seed. Siberian pea tree, green ash, chokecherry, and honey locust are now coming through the ground. Trees are commencing to put out leaves, and a heavy seed crop has set on American elm.

BELLE FOURCHE:

The rapidly diminishing supply of moisture in the soil was replenished by 0.51 inch precipitation, occurring on the night of April 25 during the first thunder storm of the season. Considerable hail saw received, but no serious damage was done to crops in this vicinity. The hail was much heavier in some nearby localities, killing some sheep and doing some damage to buildings. The weather turned cold after the storm, and a heavy frost occurred on April 27. The last two days of the week, however, were unusually warm, and the maximum temperature on April 30 was equal to the highest of record for April.

Spring crops were bruised by the hail and beating rain, and growth was further checked by the cold weather which followed. Oats, spring wheat, and barley are up with perfect stands on all cultural treatments, except spring plowing and fall plowing. Owing to lack of moisture, about 25 percent of the spring wheat and barley seeded on plowed land did not germinate until after the rain, and emergence will not be completed for a few days. A heavy soil crust is interfering with the emerging of flax, sweetclover, and alfalfa, but flax and alfalfa were up with fair stands before the crust was formed. Crested wheatgrass, bromegrass, and fall grain continued to make a good growth, but the grass land is becoming quite dry.

Maximum temperature, 89°; minimum, 28°; precipitation, 0.51 inch.

ARCHER:

The weather during the week was marked by a heavy rain of 1.09 inches. Practically no run-off occurred, and the soil was left very wet. The weather otherwise was favorable for field operations. The total precipitation for April is 3.21 inches.

The prairies are becoming green, and the cereals are making favorable growth. The growth of rye on fallow is quite rank. All rotation plots and the last of the increase areas were seeded during the week. The station garden was also planted. With the moisture and warm weather which has prevailed emergence should be prompt. Some of the early shrubs and trees are sending forth leaves, and the apricot trees are in bloom.

Station work other than the seedings mentioned above was the transplanting of trees and shrubs.

Director W. L. Quayle visited the station April 25.

Maximum temperature, 78°; minimum, 34°; precipitation, 1.09 inches.

NORTH PLATTE:

Field work for the week has consisted of planting miscellaneous plots of potatoes, grass, artichokes, etc., and cultivating alleys, in the D.L.A. fields and cleaning up weeds in general. A considerable number of trees and shrubs are being moved about the main plant. Practically everything is making very rapid growth. Native grass in the pastures is starting well, but in most places it is very thin. A thick growth of pepper grass and shepherds purse are giving the pastures a deceptive green appearance. Weather for the week has been cool with a moderate amount of wind. Precipitation was recorded on three days for a total of 1.92 inches.

Maximum temperature, 80°; minimum, 33°; precipitation, 1.92 inches.

AKRON:

A week of variable weather. The worst dust storm of the spring was experienced on Monday, when visibility was cut to about a quarter of a mile. A drizzling rain started Tuesday afternoon and continued through most of Wednesday.

The field work was the hoeing of nursery alleys, and the trimming of experimental plot roadways. The rotation corn plots were prepared despite rain interference. Tractor and team have been in the field when not prevented by rain or wet ground, preparing ground for seeding or for fallow this year. Some of the roads were duckfoot cultivated.

Spring grains are nicely emerged on all preparations. The rotation winter wheat plots failed to improve their spotted stands and will look very ragged this year. The most of the wheat that gave earlier promise of emerging, did not come through and that which did is in a very weakened condition among a well emerged stand of thistles. Winter wheat that emerged last fall is now very vigorous and growthy.

Harold E. Tower and officials from the Amarillo Office of the Soil Conservation Service visited the station Sunday. Hurley Fellows arrived about the middle of the week to resume his studies on cereal root rots.

The rain of this week brought the total for April to 2.10 inches, which is about normal.

Maximum temperature, 95°; minimum, 34°; precipitation, 0.97 inch.

COLBY:

The fore part of the week was very windy and dusty with soil blowing on bare fields here and there. There was no extensive soil blowing here, as practically all fields are either well covered or were freshly worked. General rains followed Tuesday night and Wednesday. Only 0.61 inch fell here, but all around us the rain was heavier, more than an inch generally and over 2 inches in many localities. Warm and pleasant weather has prevailed the last three days.

Winter wheat was wilting and drying considerably before the rain, but now appears to be recovering nicely. In most cases the setback probably did not hurt the wheat. It should cut down the straw growth, which should be beneficial in view of the shortage of subsoil moisture. The spring small grains are growing nicely. Cherries and apples are in bloom, apparently unhurt by the heavy freeze early in the month.

Maximum temperature, 84°; minimum, 35°; precipitation, 0.79 inch.

GARDEN CITY:

The largest rain since September 3, 1937, fell this week, totaling 0.73 inch, and another shower of 0.14 inch brought the total for the week up to 0.87 inch. This is the second consecutive month that the precipitation has been above normal. The total for April was 1.74 inches, normal is 1.65 inches.

Five out of the seven days were dusty, but none were bad. Fourteen days out of the month were dusty as compared with seventeen for March. A little local blowing occurred, but most of the dust came in from other areas, south and southwest of here.

Field work consisted of plowing the plots on the basin lister project that were not drilled to barley. Russian thistles are making a good growth, and these will be killed by cultivation next week.

C. O. Grandfield of the Bureau of Plant Industry, Manhattan, Kans., was here the first part of the week putting in wilt resistant alfalfa plants on test plots.

H. H. Walkden of the Bureau of Entomology, Manhattan, Kans., Dr. H. E. Myers, Associate Professor of Soils, and Dewey Axtell, Kansas State College, were visitors of the station.

Maximum temperature, 89°; minimum, 38°; precipitation, (April) 1.74 inches.

TUCUMCARI:

Periods of cloudy weather, variable wind direction and velocity, and great range of temperature were followed by 0.64 inch precipitation at the close of the week and month.

Both March and April were unusually windy, with a large amount of soil movement occurring. High winds rapidly depleted the soil moisture, and conditions throughout April steadily became more adverse. Rain of the past day will be especially beneficial.

Wheat on the plains south is suffering critically. Wind movement, drought, and insect attack have decreased crop prospects rapidly, while it appears the recent shower received at Tucumcari did not reach the wheat growing section.

Maximum temperature, 86°; minimum, 39°; precipitation, 0.64 inch.

DALHART:

This week gave a continuation of the sand movement. High wind velocities were sustained even though there was considerable fluctuation during the day. The wind velocity average for the week for the pasture anemometer at the 2-foot height was 16.1 m.p.h. A casual remark, which expresses occurrences, is to the effect that there is so much loose sand on the surface that the air becomes saturated readily at any velocity great enough to transport the particles. This means that the wind merely acts as a transporting agent or agency. Actually a minimum of erosion occurs. While the plots are not an inviting sight, there is only a small amount of abrasive damage and no accumulations that cannot be absorbed or disposed of.

The time is near when seedbed preparation is usually started, but none is contemplated until more favorable conditions arrive. Fresh listing and plowing (especially listing) could accumulate too large quantities of blow sand for plot work. In this connection, the cultivated area just east of the station was listed north to south during March; now there is very little accumulated soil and the ridges are holding up well. And this in spite of the fact that this will probably prove to be our windiest April. Work during the week has been sand drift removal from the yard and sand removal from conifers. This year's replants were watered. The large amounts of sand which the wind transports almost daily has whipped off Chinese elm leaves in many places and is burning, desiccating, conifer leaves. The grape vines are starting leafing which is normal; the sand is especially hard on grapes at that stage of growth.

Maximum temperature, 85°; minimum, 39°; precipitation, 0.47 inch.

BIG SPRING:

Warm weather has prevailed during the week; this together with a 0.71 inch rain has started vegetation to green up again. The rain received at the Station was rather spotted; some parts of the county received 3 to 4 inches, while others got only a light sprinkle. The delayed blow period seems to have arrived, for the past week has witnessed some high wind velocities with the usual soil movement.

Station work has consisted of harrowing fields after the rain to prevent soil blowing. Three varieties of cotton were planted April 30, and a grass nursery was put in on the twenty-seventh. Other work consisted of plowing under wheat in the roadways and in the evergreen rows.

Maximum temperature, 88°; minimum, 52°; precipitation, 0.71 inch.

WOODWARD:

The precipitation for the year to date is 8.89 inches as follows: Jan. 0.03; Feb. 2.21; Mar. 1.86; and April 4.77. That in February and early April came largely as snow, or as gentle rains, and there was practically no run-off. There was in fact little run-off until the down pour of April 26, when 2.28 inches fell in several driving showers. While there was a great deal of washing and apparently much run-off, the muddy nature of the fields indicate that a great deal of it was absorbed, especially on wheat land.

There is extreme variation in appearance of different plots due to dates of seeding and soil preparation. Whole fields, however, on richer and better prepared land have a possibility of 50 bushel yields. One farmer states he has lived here 40 years and never saw such wheat. However, this country is very spotted both as to soil, and as to methods used, so there are many rather poor prospects interspersed with those unusually good ones.

A rust infestation as high as 40 percent is reported to the south within 70 miles of Woodward. Rust started developing here about a week ago, but the average over the county is probably less than 5 percent. With normal bright, clear weather it should not be a menace.

Grasshoppers are a menace, being very bad in some localities. On the station there are very few.

Many early flowering plants are in bloom. The iris, which made such a wonderful show last year, was injured by the freeze and bloom will be light.

Work of week has been cleaning up for landscape school to be held here May 2,3,and 4; planting grass; and cultivating all fields packed by rain and in blow condition.

PENDLETON:

Precipitation during April totalled 2.00 inches, normal for April is 1.54 inches. Precipitation was all in the form of rain. Fall sown wheat is now about 20 inches high, very heavy stands prevail throughout all the Columbia Basin area. In the lower rainfall and shallow soil areas this heavy growth may be a detriment, unless sufficient rains are received to mature the heavy growth. Crop prospects are very good in all sections, precipitation in most instances has been above normal, with no run-off during the winter season. Soil samples taken during the past week show the fallow and stubble land to be wet to a depth of 6 feet. Many of the grasses in the grass nursery are beginning to head, the bluegrasses

being the first to show heads. During the past two months we have had from one to a dozen farmers every day asking about grasses, methods of seeding and varieties to use to comply with the new Agricultural Adjustment program. Sundays more visitors came to the station than any other days.

Visitors: G. R. McDole, State Coordinator S. C. S. for Washington.
J. H. Christ, State Coordinator S. C. S. for Idaho.
Harlow Parkins, Project Manager S. C. S. Athena, Oregon.
V. B. Hawks, S. C. S. Nurseries, Pullman, Washington.

Maximum temperature, 77°; minimum, 30°.

LAWTON:

Maximum temperatures of 73° to 85°, minimum temperatures of 47° to 66°, and a rain of 1.02 inches on the 26th provided good growing conditions during the past week.

Sorghums planted April 19-22 were emerging to apparently good stands within 7 to 9 days.

A majority of the wheat varieties are heading, plant growth is very rank, and the foliage is heavily covered with leaf rust. Stem rust is present and is developing very rapidly. Heading is very uneven and quite slow-inherent freeze injury becoming apparent. Young army worms are present, and the Brown wheat mite has added its damaging contribution. There is room for much apprehension as to the behavior of wheat when higher temperatures are encountered.

Wheat on the rotation plots is just beginning to head, and all the hazards affecting the variety test are present. Winter barley and winter oats are fully headed and present a promising crop prospect.

Sweetclover in the 2nd years growth is blooming freely. A light cutting of alfalfa on a few acres of rough, broken land was made on the 25th.

A trip of approximately 300 miles through Kiowa, Jackson, Harmon, Greer, Washita, and Caddo counties was made April 29. Much of the wheat in Jackson, Harmon, Greer, and the southwestern part of Kiowa county is in bad shape. But little growth has been made since the freezing weather early in April. When the leaf sheath is stripped down, freeze injury is usually apparent on the lower internodes of the culm. This portion of the culm is drying up and the straw is very weak. Much of this wheat is beginning to head at 12 to 14 inches in height. Such foliage as is present has the appearance of severe drought injury. A fairly good supply of moisture precludes drought as an injury factor of much importance. Brown wheat mite has contributed considerable injury within the past 10 days. Injury in this territory is generally estimated at 49 percent at the present time. It is very likely that this estimate will be very materially increased. The crop condition in Washita, Caddo, Comanche, and most of Kiowa presents a very good appearance at present.

Wheat is generally quite growthy. Practically none of it is headed except fields of Early Blackhull. Leaf rust infection is very heavy and stem rust is present. Brown wheat mites and a few young army worms are present in nearly all of the fields.

It is not much wonder that the wheat farmers look upon the present wheat crop with an attitude of foreboding fear. Wherever Early Blackhull wheat is observed, and there is a very appreciable acreage scattered throughout southwestern Oklahoma, freeze injury is less evident than on practically all other wheat. The crop was farther advanced, much of it heading, when the freeze occurred. In a few instances head injury is very apparent, and blackened joints appear in all fields. However in all fields of this variety subsequent plant growth has been about normal. This condition is exactly contrary to several years experience with Early Blackhull wheat on the station.

Young grasshoppers are hatching rapidly in many localities.